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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/848,869	05/18/2004	Richard Yu Gu	ORA018 US	6186
56135 7590 06/22/2007 SILICON VALLEY PATENT GROUP LLP 18805 Cox Avenue SUITE 220 Saratoga, CA 95070			EXAMINER VU, BAID	
			ART UNIT 2169	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/848,869

Applicant(s)

GU ET AL.

Examiner

Bai D. Vu

Art Unit

2109

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant has amended claims 1, 5, 9, 13, and 15-17, canceled claim 12 in the amendment filed on 10/25/2006.

Claims 1-11 and 13-17 are pending in this Office Action.

### ***Response to Arguments***

2. Applicant's arguments filed on 10/25/2006 have been fully considered but they are not persuasive. The examiner respectfully traverses applicant's arguments.

**Regarding the 35 U.S.C. 101 rejection to claims 13 and 14**, applicant argued that when the word "storage", as recited "computer readable storage medium", is taken into account, claims 13 and 14 fall within the statutory class of "product".

However, on paragraph [0042], lines 3-4 and 8-10 of the instant specification, applicant has provided evidence that applicant intends the "medium" to include waves. As such, the claim drawn to a form of energy. Energy is not one of the four categories of invention and therefore this claim is not statutory. Energy is not a series of steps or acts and thus is not a process. Energy is not a physical or object and as such is not a machine or manufacture. Energy is not a combination of substances and therefore not a composition of matter.

**Regarding the 35 U.S.C. 102(b) rejection to claim 1**, applicant argued that each and every element in claim 1 is not fully anticipated by Kojima. On the contrary, Kojima teaches each and every element in claim 1 as follows:

- Applicant argued Kojima does not teach the claimed limitation “updating rows in a table of a database”.

In response to applicant's argument, Kojima teaches *according to this form of storage of data, it is possible to change only the slot pointer without changing the row number, when a location of a slot within a data page or the length of a slot is changed. Therefore, this storage form is advantageous for deletion or insertion of a new row of data or for storage of data with a variable length (see e.g., col. 7, lines 26-32) wherein deletion and insertion referred as updating rows.*

- Applicant argued Kojima does not teach the claimed limitation “using of row-identifier and value pairs”.

In response to applicant's argument, Kojima teaches *in the case of a slot for the first row of the table 202 of FIG. 2B, data 'A, 316' is stored in the slot (see e.g., col. 7 lines 11-13) and a storage location of a row within the subsidiary storage 112, (FIG. 1) can be designated by a data page number  $i$  and a slot number  $j$ . Therefore, the combination 301 of the data page number  $i$  and the slot number  $j$  is called a row number (see e.g., col. 7 lines 20-25) wherein the data page number referred as row-identifier, the slot number referred as value, and a row number referred as a pair.*

- Applicant argued Kojima does not teach the claimed limitation “a ‘group’ of row identifiers are used ‘repeatedly’ to find corresponding page numbers and store the page numbers that are thus found in a structure”.

In response to applicant’s argument, Kojima teaches *an analysis part 105 of the program 103 then analyzes the search command to determine the most suitable process sequence for that search command, generates codes which designate the determined process sequence, and stores the process sequence designating codes 107 into a control block 106 (see e.g., col. 3, lines 4-9) wherein the process sequence for that search command referred as repeatedly finding and the table data to be processed, such as the commodity table 201 (FIG. 2A) is stored in units of a data page, for example, as shown by 302 in FIG. 5, and these data pages are stored in the subsidiary storage 112 with some data pages being duplicated in the data buffer areas 110 (see e.g., col. 3, lines 16-22) which referred as corresponding page numbers found and store the page numbers that are thus found in a structure as claimed.*

- Applicant argued Kojima does not teach the claimed limitation “storing several block-identifiers in a structure, wherein the block identifiers are of blocks that contain row identified by row-identifiers in the ‘group’”.

In response to applicant’s argument, Kojima teaches *the result 203 of the search is shown in FIG. 2D. For example, the first row (E) of the salesman column of the commodity table 201 coincides with the fourth row (E) of the employee column of the telephone number table 202. Therefore, the commodity X3 belonging to the*

*commodity column in the first row of the commodity table 201, and the EXT telephone number 331 belonging to the telephone number column in the third row of the telephone number table 202 are listed in the first row of the result table 203 as shown in FIG. 2A, along with the coincident salesman's name E. The data relating to salesman B, G and C are similarly listed (see e.g., col. 4, lines 19-31) which is disclosed the limitation.*

- Applicant argued Kojima does not teach the claimed limitation "a single operation is performed to fetch multiple pages".

In response to applicant's argument, Kojima teaches the data pages being fetched by reading out from the subsidiary storage into an appropriate data buffer (see e.g., FIG. 7 and FIG. 10).

- Applicant argued Kojima does not teach the claimed limitation "a structure containing page identifiers to fetch into a buffer the pages that are identified in the structure".

In response to applicant's argument, Kojima teaches *during the processing, data required for the processing, but not yet loaded, is loaded into a data buffer area 110 in the main storage 101 from a data page area 141 in a subsidiary storage (see e.g., col. 3, lines 16-19) wherein the data required for the processing disclosed the limitation.*

- Applicant argued Kojima does not teach the claimed limitation "element are identified based on 'pair' and that the values being updated are from the 'pair'".

In response to applicant's argument, Kojima teaches *according to this form of storage of data, it is possible to change only the slot pointer without changing the row number, when a location of a slot within a data page or the length of a slot is changed. Therefore, this storage form is advantageous for deletion or insertion of a new row of data or for storage of data with a variable length (see e.g., col. 7, lines 26-32)* which is disclosed the limitation.

Claims 2-11, which depend from claim 1, and claims 13-17, which recite limitations that are supported by claims 1-11, are rejected as being obvious over the teachings of Kojima in view of Tolkin and/or Vagnozzi and /or Hashimoto.

In light of the foreground arguments, the 35 U.S.C. 101 and 102 rejections are hereby sustained.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. **Claims 13 and 14** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

With respect to claims 13 and 14, the claims fail to place the invention squarely within one statutory class of invention. On paragraph [0042], lines 3-4 and 8-10 of the instant specification, applicant has provided evidence that applicant intends the "medium" to include coaxial cables, copper wire, and light waves. As such, the claim

drawn to a form of energy. Energy is not one of the four categories of invention and therefore this claim is not statutory. Energy is not a series of steps or acts and thus is not a process. Energy is not a physical or object and as such is not a machine or manufacture. Energy is not a combination of substances and therefore not a composition of matter.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-3, 5, 8, 9, 13, and 14** are rejected under 35 U.S.C. 102(b) as being anticipated by Kojima et al. (US Pat No. 4,785,400), hereinafter "Kojima".

With respect to **claim 1**, Kojima discloses a method of using a plurality of row-identifier and value pairs to update rows in a table of a database (column 7, lines 55-59 explains pairs identifying table rows) the method comprising:

repeatedly finding, and storing in a structure, a block-identifier of a block that contains a row identified by a row-identifier in at least a group of row-identifier and value pairs, by use of a database index (column 3, lines 4-9 and column 3 lines 10-22 explains repeatedly finding, storing and indexing the data page, column 4 lines 51-54 explains page address identifier);



performing a single operation, to store in a buffer cache (column 6, lines 7-19 explain vector read operation, column 7, lines 34-43 explains storing in the buffer), a number of blocks, said blocks being identified by block-identifiers in the structure (column 7, lines 11-25 explains data page addresses) and;

repeatedly updating, in blocks in the buffer cache, each row identified in the group of row-identifier and value pairs, using a corresponding value in the row-identifier and value pairs (column 6, lines 25-34 explains the process is repeated until all elements have been operated on).

With respect to **claim 2**, Kojima discloses further comprising: sorting the block identifiers, prior to performing the vector read operation (column 1, lines 31-37 explains pipeline processor).

With respect to **claim 3**, Kojima discloses wherein: the sorting is performed subsequent to storage of the block identifiers in the structure (column 1, lines 1-11 explains the storage of the identifiers; column 5, lines 17-21 explains sort is done after the arrangement of vector data).

With respect to **claim 5**, Kojima discloses further comprising, prior to updating: repeating said finding of block-identifiers for all row-identifiers in the group of row-identifier and value pairs (columns 8, lines 66-68, column 9 lines 1-9).

With respect to **claim 8**, Kojima discloses wherein: said structure comprises an array; and the array has a number of entries identical to the number of blocks that can be held in the buffer cache (column 7, lines 40-45 explains buffer is the same size as the data page).

With respect to **claim 9**, Kojima discloses further comprising: writing a plurality of logs, at least one log for each row identified in the group of row-identifier and value pairs (column 7, lines 62-68, column 8, lines 1-2 explain writing into the buffer directory).

With respect to **claim 13**, Kojima discloses a computer-readable storage medium encoded with instruction to perform a method comprising:

repeatedly finding, and storing in a structure, a block-identifier of a block that contains a row identified by a row-identifier in at least a group of row-identifier and value pairs, by use of a database index (column 3, lines 4-9 and column 3 lines 10-22 explains repeatedly finding, storing and indexing the data page, column 4 lines 51-54 explains page address identifier);

performing a single operation, to store in a buffer cache (column 6, lines 7-19 explain vector read operation, column 7, lines 34-43 explains storing in the buffer), a number of blocks, said blocks being identified by block-identifiers in the structure(column 7, lines 11-25 explains data page addresses) and;

repeatedly updating, in blocks in the buffer cache, each row identified in the group of row-identifier and value pairs, using a corresponding value in the row-identifier

and value pairs (column 6, lines 25-34 explains the process is repeated until all elements have been operated on).

With respect to **claim 14**, Kojima discloses the computer-readable storage medium being further encoded with said structure storing the block identifiers (claim 10 explains storing data elements and their addresses).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima in view of Tolkin (US Pat No. 6,466,942).

With respect to **claim 4**, Kojima discloses all the limitations of claim 1 from which claim 4 depended but does not explicitly disclose a method where in subsequent to said finding and prior to said storing, checking if the block identifier has a duplicate already stored in the structure and if so then not storing the block identifier in the structure. However, Tolkin teaches a method where in subsequent to said finding and prior to said storing, checking if the block identifier has a duplicate already stored in the structure

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and if so then not storing the block identifier in the structure (column 6, lines 24-28 of Tolkin explains checking uniqueness).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Tolkin's teaching of the uniqueness check into Kojima's system in order to improve query optimization and to reserve memory space (Tolkin, column 3, lines 21-27).

9. **Claims 6, 7, 11, 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima in view of Vagnozzi (US Pat No. 6,070,164).

With respect to **claim 6**, Kojima discloses all the limitations of claim 1 from which claim 6 depended but does not explicitly disclose a method wherein the database index is a hash index and the table is organized in a hash cluster; and during said finding, a single directory is used to obtain the block identifier. However, Vagnozzi teaches a method wherein the database index is a hash index and the table is organized in a hash cluster; and during said finding, a single directory is used to obtain the block identifier (Vagnozzi, column 3, lines 33-44 explains storing the data with keys and in coarse or fine slices; and column 4, lines 34-38 explains storing all the records in a single file).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Vagnozzi's teaching of the hash index, a B-Tree and single file directory into the Kojima's system in order to provide very fast query response and fast update response time (Vagnozzi, column 3, lines 1-2).

With respect to **claim 7**, Kojima discloses all the limitations of claim 1 from which claim 7 depended but does not explicitly disclose a method wherein the database index is a B-tree. However, Vagnozzi teaches a method wherein the database index is a B-tree (see Abstract of Vagnozzi, lines 20-23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Vagnozzi's teaching of using B-tree as database index into Kojima's system in order to provide very fast query response and fast update response time (Vagnozzi, column 3, lines 1-2).

With respect to **claim 11**, Kojima discloses all the limitations of claim 1 which claim 11 depended but does not explicitly disclose a method wherein a plurality of file offsets are provided to the vector read operation, one offset for each block in the group. However, Vagnozzi teaches a method wherein a plurality of file offsets are provided to the vector read operation, one offset for each block in the group (column 4, lines 24-32 of Vagnozzi explains how an offset affects storing data during processing).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Vagnozzi's teaching of the unpinning and file offset values into the indexing method of Kojima in order to maintain simple data arrangement as well as make criteria code execute faster (Vagnozzi, column 4, lines 32-33 and column 15, lines 30-31).

With respect to **claim 16**, Kojima discloses an apparatus for using a plurality of identifier and value pairs to update a table of a database, each identifier in each pair identifying a row in the table, the apparatus comprising (column 3, lines 10-22 of Kojima explains finding, storing and indexing the data page, column 4 lines 51-54 explains page address identifier) comprising:

means for performing a vector read, to store in a cache, each block in a group of blocks identified by block identifiers stored in said structure, wherein the group of blocks are all stored in the cache during execution of a single function call (column 6, lines 7-19 of Kojima explain vector read operation, column 7, lines 34-43 explains storing in the buffer).

Kojima does not explicitly disclose an apparatus for using a plurality of identifier and value pairs to update a table of a database, each identifier in each pair identifying a row in the table, the apparatus comprising:

means for using a database index to look up a block identifier of a block that contains the row identified by an identifier in the plurality of identifier and value pairs;  
means for storing the block identifier in a structure in memory;

means for repeating (using the database index to look up and storing the block identifier) for all identifiers in at least a group of identifier and value pairs;

means for modifying a row in a block stored in the cache, using a value in the plurality of identifier and value pairs; and means for repeating said modifying with each row identified in the group of identifier and value pairs.

Vagnozzi teaches an apparatus for using a plurality of identifier and value pairs to update a table of a database, each identifier in each pair identifying a row in the table, the apparatus comprising:

means for using a database index to look up a block identifier of a block that contains the row identified by an identifier in the plurality of identifier and value pairs;

means for storing the block identifier in a structure in memory; means for repeating (using the database index to look up and storing the block identifier) for all identifiers in at least a group of identifier and value pairs (column 10, lines 63-67, column 11, lines 1-5, column 14, lines 29-33 of Vagnozzi explain retrieval);

means for modifying a row in a block stored in the cache, using a value in the plurality of identifier and value pairs; and means for repeating said modifying with each row identified in the group of identifier and value pairs (column 15, lines 36-47 of Vagnozzi explains that maintaining modifications with a transaction number).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Vagnozzi's teaching of the repeatable indexing and modification into Kojima's system in order to accelerate the processor performance and ensure efficient retrieval of data (Vagnozzi, column 15 lines 64-66).

With respect to **claim 17**, Kojima discloses a method of using a plurality of row-identifier and value pairs to update a table of a database, each row-identifier in each pair identifying a row in the table, (column 7, lines 55-59 of Kojima explains pairs identifying table rows) the method comprising:

finding a block-identifier of a block that contains the row identified by a row-identifier in a row-identifier and value pair, by use of a database index; storing the block-identifier in a structure; repeating (finding the block-identifier and storing the block-identifier) (column 3, lines 10-22 explains finding, storing and indexing the data page, column 4 lines 51-54 of Kojima explains page address identifier);

for all row-identifiers in at least a group of row-identifier and value pairs performing a vector read operation, to store in a buffer cache, each block in a group of blocks identified by block-identifiers stored in said structure, wherein the group of blocks are all stored in the cache during execution of a single function call (column 6, lines 7-19 of Kojima explain vector read operation, column 7, lines 34-43 explains storing in the buffer).

Kojima does not explicitly disclose updating the row in the block in the cache, using the value in the row-identifier and value pair; and repeating said updating with each row identified in the group of row-identifier and value pairs.

Vagnozzi teaches a method of using a plurality of row-identifier and value pairs to update a table of a database, each row-identifier in each pair identifying a row in the table, (column 7, lines 55-59 of Kojima explains pairs identifying table rows) the method comprising:

updating the row in the block in the cache, using the value in the row-identifier and value pair; and repeating said updating with each row identified in the group of row-identifier and value pairs (column 15, lines 36-47 of Vagnozzi explains that maintaining modifications with a transaction number).



It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Vagnozzi's teaching of the repeated row updating of a group into the indexing and cache storage of Kojima's system in order to minimize the storage space required for indexing and maintain completeness when updating records (Vagnozzi, column 3 line 8; and column 12 lines 59-60).

10. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Vagnozzi in view of Kojima.

With respect to **claim 15**, Vagnozzi discloses a computer comprising a processor and a memory coupled to the processor (column 10, lines 39-41 of Vagnozzi) the memory being encoded with instructions to:

automatically use a database index to look up a block identifier of a block that contains a row identified by an identifier in a plurality of identifier and value pairs to be used to update a table in a database (column 10, lines 63-67, column 11, lines 1-5, column 14, lines 29-33 of Vagnozzi explain retrieval);

automatically store the block identifier in a structure in memory (claim 1 of Vagnozzi);

automatically repeat instructions to said automatically use and said automatically store, for all identifiers in at least a group of identifier and value pairs (column 12 of, lines 35-41 of Vagnozzi explains completing the find operation multiple times); and

automatically repeat instructions to said automatically modify with each row identified in the group of identifier and value pairs (column 15, lines 36-47 of Vagnozzi explains that maintaining modifications with a transaction number).

Vagnozzi does not explicitly disclose automatically perform a vector read, to store in a cache, each block in a group of blocks identified by block identifiers stored in said structure, wherein the group of blocks are all stored in the cache during execution of a single function call;

automatically modify a row in a block stored in the cache, using a value in the plurality of identifier and value pairs.

Kojima teaches automatically perform a vector read, to store in a cache, each block in a group of blocks identified by block identifiers stored in said structure, wherein the group of blocks are all stored in the cache during execution of a single function call (column 6, lines 7-19 of Kojima explain vector read operation, column 7, lines 34-43 explains storing in the buffer).

automatically modify a row in a block stored in the cache, using a value in the plurality of identifier and value pairs (column 6, lines 7-19 of Kojima explain vector read operation, column 7, lines 34-43 explains storing in the buffer, see abstract of Kojima, lines 6-13, explains the vector is processed when a command is selected).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Kojima's teaching of the cache storage into the automatic indexing and modifying capabilities Vagnozzi's system in order to make accessing data in the tables easy and to keep them consistently updated (Kojima, column 7, lines 1-4).

11. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima in view of Vagnozzi and further in view of Hashimoto (US Pub No. 200310110352 A1)

With respect to **claim 10**, Kojima discloses all the limitations of claims 1 and 9 from which claim 10 depended but does not explicitly disclose a method wherein unpinning each block after updating all rows in said each block and flushing an unpinned block to disk only when another block needs space in the buffer cache occupied by the unpinned block. However, Vagnozzi teaches a method wherein unpinning each block after updating all rows in said each block (column 15, lines 23-27 of Vagnozzi) and Hashimoto teaches a write cache function performed by the hard disk drive controller (page 1, paragraphs 0015 and 0016 of Hashimoto).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Vagnozzi's teaching of the unpinning and file offset values into the indexing method of Kojima's system in order to maintain simple data arrangement as well as make criteria code execute faster (Vagnozzi, column 4, lines 32-33 and column 15, lines 30-31) and it would have been obvious to one of ordinary skill in the art at the time the invention was made apply Hoshimoto's teaching of writing functionality into the indexing method of Kojima's system in order to speed up the processing rate and maintain efficient data storage (Hoshimoto, page 3, paragraph 53).

***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bai D. Vu whose telephone number is 571-270-1751. The examiner can normally be reached on Mon - Fri 7:30 - 5:00 EST.

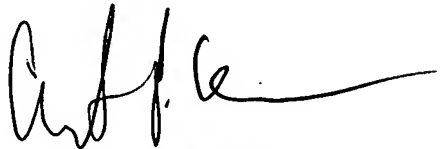
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chace can be reached on 571-272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bai Vu

May 25, 2007

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CHRISTIAN CHACE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100